REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

To place the subject application in better form, a new abstract is presented. No new matter has been added by this change.

Claims 46-53 are presented for consideration in lieu of claims 1-45, which have been canceled without prejudice or disclaimer. Claim 46 and 53 are independent. Support for these claims can be found in the original application, as filed. The Examiner's attention is directed, for example, to the subject specification at page 58, lines 3-17, with respect to the discussion of Figure 5. Therefore, no new matter has been added.

Applicant requests favorable reconsideration and withdrawal of the rejections set forth in the above-noted Office Action.

Claims 1-3 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,170,622 to Wakui et al. Claims 4-12 were rejected under 35 U.S.C. § 103 as being unpatentable over the Wakui et al. patent. Applicant submits that the cited art does not teach many features of the present invention, as previously recited in claims 1-45. Therefore, these rejections are respectfully traversed. Nevertheless, Applicant submits that claims 46-53, for example, as presented, amplify the distinctions between the present invention and the cited art.

In one aspect of the present invention, independent claim 46 recites an active vibration suppression apparatus that includes an actuator fixed to a vibration suppression target, an inertial load driven relative to the target by the actuator, and a driving system which drives the actuator

based on a first signal corresponding to the vibration, generated or to be generated, of the target, wherein the driving system comprises a compensation unit which performs a compensation for the first signal. The compensation, separately or as a composite compensation, includes (i) a linear compensation for the first signal to obtain a first compensated signal, and (ii) a nonlinear compensation for the first compensated signal to obtain a second compensated signal, a rate of a change in the second compensated signal to a change in an absolute value of the first compensated signal becoming less with an increase of the absolute value.

In another aspect of the present invention, independent claim 53 recites a method applied to an active vibration suppression apparatus. The apparatus includes an actuator fixed to a vibration suppression target and an inertial load driven relative to the target by the actuator. The method includes performing a compensation for a first signal corresponding to vibration, generated or to be generated, of the target, wherein the compensation, separately or as a composite compensation, includes (i) a linear compensation for the first signal to obtain a first compensated signal, and (ii) a nonlinear compensation for the first compensated signal to obtain a second compensated signal, a rate of a change in the second compensated signal to a change in an absolute value of the first compensated signal becoming less with an increase of the absolute value, and driving the actuator based on the second compensated signal obtained in the performing step.

Applicant submits that the cited art does not teach or suggest such features of the present invention, as recited in independent claims 46 and 53.

The Wakui et al. patent discloses an anti-vibration apparatus that has a plurality of active support legs, which support an anti-vibration table. In that patent, the anti-vibration table is a target of vibration suppression. Apparently, the Examiner considers the table to be an inertial load. Applicant submits, however, that the table discussed in the Wakui et al. patent would, perhaps, correspond to a vibration suppression target, as in the present invention recited in independent claim 46, but not to an inertial load, as in the present invention recited in that claim. Applicant submits, therefore, that the Wakui et al. patent does not teach or suggest at least the features of the inertial load of the present invention, as recited in the independent claims.

In addition, the Wakui et al. patent discloses a pressure feedback loop for detecting an internal pressure of an air spring provided in each of a plurality of active support legs and for feeding back a signal to the control system of the anti-vibration apparatus, an acceleration feedback loop for generating a damping to the table, and a position feedback for positioning the table. Applicant submits, however, that none of the feedback loops discussed in the Wakui et al. patent teaches or suggests anything regarding the compensation unit of the present invention, as recited in independent claims 46 and 53.

Still further, Applicant submits, even assuming arguendo, that if one were to combine the pressure feedback loop, the acceleration feedback loop and the position feedback loop, which are discussed individually in the Wakui et al. patent, that combination would still not teach or suggest at least the features of the linear compensation or the non-linear compensation of the present invention recited in independent claims 46 and 53.

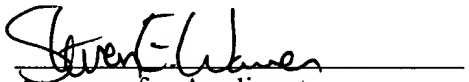
For the reasons noted, Applicant submits that the Wakui et al. patent does not teach or suggest many features of the present invention, as recited in independent claims 46 and 53. Accordingly, Applicant further submits that the present invention, as recited in independent claims 46 and 53, is patentably defined over the cited art.

Dependent claims 47-52 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in independent claim 46. Further individual consideration of these dependent claims is requested.

Applicant further submits that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,



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